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**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Alexandria Division**

UNITED STATES, *et al.*,

Plaintiffs,

v.

GOOGLE LLC,

Defendant.

**Civil Action No.
1:23-cv-00108-LMB-JFA**

**DEFENDANT GOOGLE LLC’S RESPONSES TO PLAINTIFFS’ FIRST SET OF
INTERROGATORIES**

Pursuant to Rules 26 and 33 of the Federal Rules of Civil Procedure (the “Federal Rules”) and the Local Rules of the United States District Court for the Eastern District of Virginia (the “Local Rules”), Defendant Google LLC (“Google”), by its undersigned counsel, responds to Plaintiffs’ First Set of Interrogatories (Nos. 1-6) as follows.

Interrogatory 1:

For each Relevant Product, identify every current or past competitor from 2007 to the present and, if relevant, when they entered or exited the market. The term “Relevant Products” means Google Ad Manager, Google Display & Video 360, Google Ads, and any other product offered by Google that facilitates the sale or purchase of digital display advertising, and all subsidiary products, predecessor products, and like abandoned products. For the avoidance of doubt, “Relevant Products” includes DoubleClick for Publishers, AdX, DoubleClick Bid Manager, Google Display Network, AdWords, and AdSense for Content.

Google’s Objections to Interrogatory 1:

Google objects to Interrogatory 1 as overbroad, unduly burdensome, and disproportionate to the needs of the case because it seeks to require Google to identify “every current or past competitor” to an undefined number of products going back 16 years.

Google further objects to Interrogatory 1 as overbroad, unduly burdensome, and disproportionate to the needs of the case because it seeks to require Google to research information about when its competitors entered or exited that is equally accessible to Plaintiffs from public materials.

Google further objects to Interrogatory 1 as seeking information outside Google’s possession, custody, and control because it seeks to require Google to conduct an analysis that depends upon Google recreating competitive conditions for every year going back 16 years.

Google further objects to Interrogatory 1 as overbroad, unduly burdensome, and disproportionate to the needs of the case because it seeks information concerning products other than Google Ad Manager, AdSense for Content, Google Ads, and DV360.

Subject to and without waiving any of Google’s objections, Google will undertake reasonable efforts to identify current or past competitors for Google Ad Manager, AdSense for Content, Google Ads, and DV360 based on information currently available and during the time allotted.

Google’s Response to Interrogatory 1:

Google Ad Manager,¹ AdSense for Content, Google Ads,² and Display & Video 360³ (collectively, “Google’s Ad Tech Products”) operate in a multi-sided, highly dynamic

¹ Formerly DoubleClick for Publishers and AdX.

² Formerly AdWords.

³ Formerly DoubleClick Bid Manager.

marketplace in which new competitors and tools are launched regularly and publishers and advertisers frequently turn to their own proprietary tools to buy or sell online advertising space. In addition, both Google and its competitors frequently combine what could be viewed as multiple complementary functionalities into a single product. Any or all of those tools could, therefore, reasonably be considered “current or past competitors” of Google’s Ad Tech Products. To be responsive to Plaintiffs’ request, Google has made reasonable efforts to sort the competitive tools listed below by the Google Ad Tech Product that, to Google’s knowledge, its principal functionality most resembles. By doing so, however, Google does not intend to waive any argument that such tools are competitive constraints on other Google Ad Tech Products or that this list includes every such tool or competitor. Further, Google’s responses to this Interrogatory should not be understood to suggest that Google believes any or all of the products addressed in the responses that follow compete in separate relevant antitrust markets.

Given the breadth of competitors, the dynamic nature of the marketplace, Google’s limited visibility into all of the competing tools and their functionalities, and the time provided to respond, this list is not comprehensive. Google has nevertheless used reasonable efforts to provide a list of companies that it believes either compete or have competed with Google’s Ad Tech Products. Google has also used reasonable efforts to note any companies that Google understands to have stopped offering a product or service that previously competed with Google’s Ad Tech Products. Google will continue to supplement its Response to Interrogatory No. 1 as necessary.

Subject to the foregoing qualifications and subject to and without waiving Google’s earlier-served objections, Google hereby responds to Interrogatory 1 as follows:

First, the following companies or products provide services to aid publishers in managing sales of their display ad inventory, including ad delivery, reporting, and forecasting services (*see* Compl. ¶ 283), and are therefore competitors of **Google Ad Manager’s publisher ad server** (formerly known as DoubleClick for Publishers) and **AdSense for Content**:

Ad Maven
adcash
Adform
AdGlare
Admost
Adning
Adocean
AdsKeeper
AdsTerra
ADTECH
Amazon (incl. Amazon Publisher Services)
Apollo Global Management (incl. Brightroll, Oath/Verizon, and Yahoo! ad tech assets)
Apple
AppLovin (incl. Mopub)
Appodeal Stack
aQuantive (reportedly acquired by Microsoft in 2007)
Automatic
Bidvertiser
BlueStreak
BroadStreetAds
BuySellAds (incl. CarbonAds)
CheckM8
Commission Junction
Criteo
Digital Turbine
Epom
Equativ
Ezoic
FreeWheel
H12 Media
Improve Digital
infolinks

InMobi
Kevel
Liftoff (incl. Vungle)
Magnite (incl. SpotX and Springserve)
Mediavine
Meta (incl. Audience Network)
mgid
Microsoft (incl. Xandr, Microsoft Audience Network, and Open AdStream assets)
Oath Ad Server (reportedly shut down in 2020)
OpenX (free ad server reportedly shut down in 2013; paid ad server reportedly shut down in 2019)
Outbrain (incl. AdNgin)
PlugRush
PopAds
PopCash
PreBid.org
Revive
Sun Ad Network
Taboola (incl. Skimlinks)
Tapjoy
The Moneytizer
TikTok (incl. Pangle)
Timehop
TopOn
TradeDoubler
Unity (incl. ironSource)
URX
Verve Group (incl. Smaato)
Vistar Media
Warner Brothers Discovery (incl. ZEDO assets)
ylliX
Zynga (incl. Chartboost)

In addition to the companies listed above, Google is aware that various publishers have deployed their own proprietary ad serving and monetization systems that are substitutes, in whole or in part, for Google Ad Manager and AdSense for Content. Google does not have a complete list of

such publishers, but examples of publishers with in-house publisher ad servers and/or monetization tools include Amazon, Apple, Disney, Meta, Microsoft, Pinterest, Reddit, Snap, and TikTok.

Second, the following companies or products provide real-time auction services for publishers seeking to sell their display ad inventory (*see* Compl. ¶ 291) and are therefore competitors of **Google Ad Manager's ad exchange** (formerly known as AdX) and **AdSense for Content**.

33Across
Ad Generation
Ad Maven
Adagio
adaptMX
adcash
AdECN (reportedly shut down in 2011)
Adform
Admost
AdPushup
AdsKeeper
AdsTerra
ADTECH
AdYouLike
AerServ
Amazon (incl. Amazon Publisher Services)
Apollo Global Management (incl. Brightroll, Oath/Verizon, and Yahoo! ad tech assets;
Yahoo! SSP reportedly will shut down in 2023)
AppLovin (incl. Mopub)
AppMonet
Appodeal Stack
Basis Technologies
Beachfront
Bidstack
Bidtellect
Bidvertiser
BounceX

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Brightcom
BuySellAds (incl. CarbonAds)
Carambola
Chocolate Platform
Colossus
Comcast (incl. FreeWheel)
Commission Junction
Connatix
Consumable
Content.ad (reportedly shut down in 2022)
Criteo (incl. MediaGrid and Bidswitch)
Digital Turbine
EMX
ePlanning
Equativ
Ezoic
Fluct
Freestar
GumGum
H12 Media
Improve Digital
Index Exchange
infolinks
InMobi
Kargo
Liftoff (incl. Vungle)
LKQD
LockerDome
Magnite (incl. Carbon, Rubicon Project, SpringServe, SpotX, and Telaria)
Media.net
Mediavine
Meta (incl. Audience Network; FBX and LiveRail reportedly shut down in 2016)
mgid
Microsoft (incl. Xandr, Microsoft Audience Network, and Open AdStream assets)
MobFox
NoBid
OFT Media
OneMobile
OneTag

OpenX
Outbrain (incl AdNgin)
PlugRush
PopAds
PopCash
Publicis Groupe (incl. Epsilon)
Pubmatic
PulsePoint (incl. ContextWeb)
Quantcast
RevContent
ShareThrough (incl. DistrictM)
Sonobi
Sortable
Sovrn
Sun Ad Network
Synacor Media
Taboola (incl. Skimlinks)
Tapjoy
Teads
The Moneytizer
The Trade Desk
TikTok (incl. Pangle)
TopOn
TradeDoubler
Tremor (incl. RhythmOne and Unruly)
TripleLift
TrustX
Ucfunnel
Undertone
Unity (incl. ironSource)
URX
Verve Group (incl. Smaato)
Vistar Media
Vox Media (including Concert.io)
Yieldlab
Yieldmo
YieldNexus
YieldOne
ylliX

Zynga (incl. Chartboost)

In addition to the companies listed above, Google is aware that various publishers have deployed their own proprietary auction-based monetization systems that are substitutes, in whole or in part, for Google Ad Manager and AdSense for Content. Google does not have a complete list of such publishers, but examples of publishers with in-house auction-based monetization systems include Amazon, Apple, Disney, Meta, Microsoft, Pinterest, Reddit, Snap, and TikTok.

Third, the following companies or products provide advertisers the ability to create ad campaigns that purchase publisher advertising inventory via real-time auctions and therefore compete with **Display & Video 360** and **Google Ads**:

1TRN
Aarki
Active Agent
Acuity Ads
Adelement
Adform
Adhood TR
Adiant
Adkernel
adloop
Admixer Technologies
adnologies
Adobe
AdPlay Technology
AdRecover
AdRiver
AdSame
AdScience
Adspend
advanced STORE
Aerify Media
aki eyeview
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Amazon (incl. Amazon Ads, Amazon DSP, and Sizmek assets)
Apollo Global Management (including Yahoo! DSP and Oath assets)
Appier
Apple
AppLovin (incl. Mopub)
Arpeely
AudienceFUEL
AudienceScience
Basis Technologies
Bidtellect
BidTheatre
Bidvertiser
Brightroll
BuySellAds (incl. Carbon Ads)
Chocolate Platform
Choozle
clicksco
Comcast (incl. Beeswax, FreeWheel DemandSuite, and NBCUniversal One Platform)
Connexity
Criteo (incl. Iponweb and BidSwitch)
DeepIntent
Delta Projects AB
Digilant
Digital Turbine
Disney
Doordash
E-contenta
Emerse
EnvisionX
Equativ (incl. LiquidM)
Eskimi
Evadav
FreakOut
GoPuff
GroovinAds
infolinks
Inmobi
Instacart
Intelliad

Kavanga Media
Liftoff (incl. Vungle)
Locala
LucidMedia
Mantis
Marin
mediaforce
MediaGlu
MediaMath
Meta (incl. Facebook, Instagram, Messenger, and Meta Audience Network)
Microsoft (incl. Xandr Invest, Microsoft Audience Network, LinkedIn Ads)
Moloco
NextRoll
OneDigitalAd
Outbrain (incl. Zemanta)
Pinterest Ads
Platform.io
publica
PowerLinks Media
PropellerAds
Publicis Groupe (incl. Conversant)
Quantcast
Quora for Business
Rakuten
Retail Rocket
Roku (incl. DataXu assets)
Rontar
RTB House
Samsung Ads (incl. AdGear)
ScaleOut DSP
SHE Media
Simpli.fi
Skai
Smartology
SnapChat Ads
Solocal
StackAdapt
Storygize
Sun Ad Network

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Taboola
Tagtoo
TapJoy
TapTap Networks
The Trade Desk
TikTok (incl. TikTok Ads and Pangle)
Tremor (incl. Amobee and Videology)
Twitter Ads
Unity (incl. ironSource)
Vertoz Advertising
Verve DSP
Viant (incl. Adelphic Mobile)
Walmart Connect
Yieldr
Zeta Marketing Platform
Zynga (incl. Chartboost)

In addition to the companies listed above, Google is aware that various publishers have deployed their own proprietary ad serving and monetization systems and self-service buying doors that permit advertisers to run campaigns and purchase the publisher's ad inventory in automated real-time auctions, and which compete with Google Ads and Display & Video 360 for advertiser spend. Google does not have a complete list of such publishers, but examples of publishers with such tools include Amazon, Apple, Disney, Meta, Microsoft, Pinterest, Reddit, SnapChat, and TikTok. In addition, numerous other publishers sell advertising space directly to publishers through non-programmatic means, which also operates as competitive constraints on Google Ads and Display & Video 360.

Interrogatory 2:

For all display advertising impressions purchased or won by any Federal Agency Advertiser, identify, on a monthly basis from January 2019 to the present for each Relevant Product and in total across all Relevant Products, the Federal Agency Advertiser and number of advertising impressions purchased or awarded; amount of associated gross spending, inclusive of fees or revenue shares; and associated revenue recorded in any form by Google.

Google's Objections to Interrogatory 2:

Google objects to Interrogatory 2 as vague, ambiguous, and unduly burdensome because it seeks to require Google to identify unspecified “components” of the agencies expressly listed in Definition 4 when Plaintiffs have better information than Google about what constitutes a “component” of those agencies and about the “components” on behalf of which Plaintiffs are seeking damages.

Google further objects to Interrogatory 2 as vague and ambiguous because the terms “associated revenue” and “recorded by Google” are undefined. Google’s best understanding of the ordinary meaning of these terms in the context of Interrogatory 2 is that they call for Google’s gross revenue from the relevant transactions, but that interpretation would render other portions of this Interrogatory superfluous so Google is willing to meet and confer to better understand this Interrogatory.

Google further objects to Interrogatory 2 as overbroad and unduly burdensome because it seeks to require Google to provide the “number of advertising impressions purchased or awarded” and the “amount of associated gross spending, inclusive of fees or revenue share” on a monthly basis for each Federal Agency Advertiser when that information that should be equally available to Plaintiffs from each Federal Agency Advertiser.

If Interrogatory 2 seeks information about “all display advertising impressions purchased or won by any Federal Agency Advertisers” without limiting the request to impressions purchased through Google Ads or DV360, Google objects to the Interrogatory as seeking information outside Google’s possession, custody, and control.

Subject to and without waiving any of Google's objections, Google will provide, for each of the Federal Agency Advertisers, the following data that Google maintains in the ordinary course for each month since January 2019, separately for purchases made through Google Ads and DV360: (a) the number of display advertising impressions purchased; and (b) the amount of associated gross spending received from the Federal Agency Advertiser by Google, inclusive of fees or revenue shares.

Google's Response to Interrogatory 2:

In response to this Interrogatory, Google provides Exhibit A, which contains (a) the number of display advertising impressions purchased via Google Ads or DV360; and (b) the amount of associated gross spending received from the Federal Agency Advertiser by Google, inclusive of fees or revenue shares. The information contained in Exhibit A for Federal Agency Advertisers ("FAA") was derived from data maintained in the ordinary course of business by Google's Finance group. The Gross Revenue and Impressions in Exhibit A are comprised of total advertiser spend on Google Ads and DV360 during the time period January 1, 2019 to March 31, 2023, inclusive of any fees or revenues retained by Google, and including advertiser spend on Google O&O and third-party web and in-app display ad inventory (but excluding for the avoidance of doubt spend on Google Search and AdSense for Search).

Google conducted a reasonable investigation to determine the relevant FAAs described by Plaintiffs. The Finance data used to create Exhibit A, however, rely on customer-entered data for certain data fields, including the field listing the name of the advertiser customer. These customer-entered fields are not verified, curated, or cleaned by Google. In many instances, the customer name data field includes abbreviations, acronyms, and/or typographic errors. Because

Google relied, in part, on the customer name field to determine potential FAAs (or components thereof), Google cannot confirm that any FAAs listed with misspelled, misentered, or unclearly described names were identified through this investigation or that their relevant metrics were incorporated in Exhibit A.

In an April 19, 2023 letter, Plaintiffs stated that by “amount of associated gross spending, inclusive of fees or revenue shares,” they intended to seek “information about what was charged for each impression purchased by Federal Agency Advertisers at various points in the ad tech stack, and that [Plaintiffs’] request is not limited to what Google charged Federal Agency Advertisers.” Subject to and without waiving any of Google’s objections, and although this meaning was not readily apparent from the language of the Interrogatory, Google is willing to meet and confer about this clarification.

Interrogatory 3:

For each Relevant Product, state its booked revenue, net revenue, gross margin, and operating profit, on a United States-only and worldwide basis, for each year from 2008 to the present, and explain Google’s methodology for allocating expenses to each Relevant Product.

Google’s Objections to Interrogatory 3:

Google objects to Interrogatory 3 as overbroad, unduly burdensome, and disproportionate to the needs of the case because it seeks to require Google to provide information on its revenues, margins, and profit by Relevant Product going back 15 years.

Google further objects to Interrogatory 3 as vague and ambiguous because it fails to define the phrases “booked revenue,” “net revenue,” “gross margin,” and “operating profit.” Google will interpret these terms consistent with its general business understanding of their meaning.

Google further objects to Interrogatory 3 as overbroad, unduly burdensome and disproportionate to the needs of the case because it seeks to require Google to describe “methodologies for allocating expenses” for “each Relevant Product” over a 15-year time period.

Google further objects to Interrogatory 3 because it seeks information on a “United States-only” basis and Google does not maintain the requested data on a geographically-segmented basis.

Google further objects to Interrogatory 3 as vague, ambiguous, overbroad, unduly burdensome, and disproportionate to the needs of the case because it seeks data concerning products other than Google Ad Manager, AdSense for Content, Google Ads, and DV360.

If Interrogatory 3 seeks data about advertising purchased through Google Ads other than display advertising (e.g., search advertising), Google objects to the Interrogatory as overbroad, unduly burdensome, and disproportionate to the needs of the case.

Subject to and without waiving any of Google’s objections, Google will provide the following information, on a worldwide basis, for the years 2021 and 2022, separately for Google Ad Manager, AdSense for Content, Google Ads (limited to display advertising), and DV360: (a) booked revenue; (b) net revenue; (c) gross margin; and (d) operating profit. Google is additionally continuing to investigate what product-level data can be reliably produced for years prior to 2021 (when Google’s current product-level P&L system was put in place), and will supplement its response as appropriate.

Google’s Response to Interrogatory 3:

Google has gathered and reviewed financial data (booked revenue, net revenue, gross margin, and operating profit) by product (including Google Ad Manager, AdSense for Content,

DV360, and Google Ads (limited to Display Network)) for the years 2021 and 2022. These data are attached as Exhibit B.

Google has also conducted an investigation into the availability of product-level financial data for years before 2021. Google's assessment is that it can only provide consistent product-level financial metrics for 2021 and 2022.

Until recently, Google's Finance group had not developed ordinary-course methodologies to account for the independent financial performance of Google's Ad Tech Products (including methods to allocate revenue, expenses, and profits across products) and therefore did not systematically maintain product-level financial metrics. Additionally, Google is limited in its ability to retroactively apply the current methodology, as the data used by the current methodology may not be available for earlier years, and the assumptions supporting the methodology may not be appropriate in light of the many changes to Google's business over fifteen years.

Google has made extensive productions to the Division of documents concerning various financial metrics. While some documents created prior to 2021 might appear to reflect product-level financial metrics on an ad hoc basis, Google cannot confirm that those documents were created using accurate and consistent methodologies to allocate revenues, profits, and costs across the various products. Some of these documents reflect Google's iterative efforts to develop ordinary course product-level financial metrics and therefore may only reflect parts of the methodology Google uses today to create those metrics. Moreover, Google understands that the apparent product-level data reflected in pre-2021 documents were based on imperfect approximations of how revenue, profit, and/or cost could be allocated across products. The data

reflected in such documents therefore may differ significantly from the data Google provides in Exhibit B.

Interrogatory 4:

Identify each publisher that discontinued use of DoubleClick for Publishers product from 2005 to the present and, if known, what product those customers used as a replacement for DoubleClick for Publishers.

Google's Objections to Interrogatory 4:

Google objects to Interrogatory 4 as overbroad, unduly burdensome, and disproportionate to the needs of the case because it seeks information regarding products that publishers that discontinued use of DoubleClick for Publishers “used as a replacement for DoubleClick for Publishers” that is not in Google’s possession, custody or control, and/or that is obtainable from another source from which it would be more convenient, less burdensome, or less expensive to produce the information.

Google further objects to Interrogatory 4 as overbroad, unduly burdensome, and disproportionate to the needs of the case because it seeks information going back 18 years on publishers that discontinued use of DoubleClick for Publishers.

Google further objects to Interrogatory 4 as vague and ambiguous because the term “discontinued” is not defined and could potentially include “each publisher that discontinued use of DoubleClick for Publishers” on all their ad inventory or, alternatively, “each publisher that discontinued use of DoubleClick for Publishers” on some portion of their inventory, such as on one website or in one geographic region, while continuing to use DoubleClick for Publishers on other websites or in other geographic regions.

Subject to and without waiving any of Google's objections, Google will use reasonable efforts to identify publishers that had at least one impression served by DoubleClick for Publishers from the earliest date available in the relevant system to December 31, 2021 but has not had any such impression served by DoubleClick for Publishers between January 1, 2022 and December 31, 2022.

Google's Response to Interrogatory 4:

In order to fully respond to this Interrogatory, Google must collect and analyze data on the total number of impressions served by Google Ad Manager's ad server each year for each publisher from at least 2014 through 2022. Google is still collecting, assessing, and reviewing this data. Google anticipates that it will be able to produce a list of publishers responsive to this Interrogatory on or around May 30, 2023.

Interrogatory 5:

Explain how the data on the graph labelled "Distribution of Remnant served Impressions" on page GOOG-DOJ-AT-02194031 of GOOG-DOJ-AT-02194020 was calculated, including the inputs, relevant geography, assumptions, and calculations and identify data sufficient to re-produce such analysis from January 1, 2008 to the present.

Google's Objections to Interrogatory 5:

Google objects to Interrogatory 5 as overbroad, unduly burdensome, and disproportionate to the needs of the case because it requires Google to "identify data sufficient to re-produce" the analysis in the identified graph going back fifteen years.

Google further objects to Interrogatory 5 as vague and ambiguous because it requires Google to explain the "assumptions" regarding "how the data on the graph . . . was calculated" without defining the term "assumptions."

Google further reserves its right to object to Interrogatory 5 as seeking information that is outside of Google's possession, custody, or control if the individual or individuals who created the identified graph and initially "calculated" the data cited in the Interrogatory are no longer employed at Google.

Subject to and without waiving any of Google's objections, Google will conduct a reasonable search to attempt to identify the data used to create the identified graph and attempt to explain how such data was used to create the graph.

Google's Response to Interrogatory 5:

The data used to produce the graph on page GOOG-DOJ-AT-02194031 of GOOG-DOJ-AT-02194020 are from the Header Bidding Monitor ("HB Monitor") data set. Google, through its outside counsel, has previously provided a description of HB Monitor in its November 18, 2021 Letter to the Department of Justice Antitrust Division's George Nierlich. Along with the letter, Google provided the Division with a comma-delimited text file containing HB Monitor data for North America from June 2018 to December 2020. On November 30, 2022, Google provided the Division with a refresh of this data set through September 30, 2022.

Google has conducted a reasonable investigation to determine how the identified graph was created. While Google was able to identify the data used to create the identified graph as HB Monitor data, it has not been able to identify who created the graph. Google is therefore unable to determine what, if any, filters were applied to the data in making the graph (such as whether the HB Monitor data used to make the graph were limited by geographic region). Google has made reasonable efforts to recreate the identified chart by applying various filters to the HB Monitor data and has been unable to create the results depicted in the identified graph.

Because there is not a saved static copy of the HB Monitor data from the time the chart was made (which appears to have been around December 2019, according to page GOOG-DOJ-AT-02194020 of the document), updates to the data set or methodology after that date would prevent the exact recreation of the identified graph.

Prior to the earliest date in the HB Monitor data set, Google did not maintain an equivalent system for estimating the presence of header bidding, which only came to prominence in or around 2015. Google is therefore not aware of data that would permit replication of the identified graph for periods before 2018.⁴

Interrogatory 6:

Explain, for GOOG-DOJ-AT-02162134, how the results in each separate table shown on pages GOOG-DOJ-AT-02162137–142 were calculated, including the inputs, relevant geography, assumptions, and calculations, and identify data sufficient to reproduce such analysis by month from January 1, 2008 to the present.

Google's Objections to Interrogatory 6:

Google objects to Interrogatory 6 as overbroad, unduly burdensome, and disproportionate to the needs of the case because it requires Google to “identify data sufficient to reproduce” the analysis in the identified graph going back fifteen years.

Google further objects to Interrogatory 6 as vague and ambiguous because it requires Google to explain the “assumptions” regarding how the results in the tables were calculated without defining the term “assumptions.”

⁴ This includes the Header-Bidding-Detection data table, referenced below, which also did not exist prior to 2018.

Google further objects to Interrogatory 6 as seeking information that is outside of Google's possession, custody, or control because the individuals who undertook the data analysis to create the identified tables are no longer employed at Google.

Subject to and without waiving any of Google's objections, Google will conduct a reasonable search to attempt to identify the data used to create the identified tables and attempt to explain how such data was used to create the tables.

Google's Response to Interrogatory 6:

The data used for the referenced tables in GOOG-DOJ-AT-02162137-142 come from two sources: DRX-Internal-Stats table and the Header-Bidding-Detection table. The DRX-Internal-Stats table contains information about Google Ad Manager's publisher ad server and ad exchange impression and revenue activity. Each day, the DRX-Internal-Stats table pulls data from various logs and summarizes query, impression, and revenue related metrics by various fields (such as the line item ID, publisher, attributes of the ad served, and the transaction type which wins the auction). Included in this summary are IDs corresponding to various experiments implemented by Google employees.

Publishers do not directly provide Google Ad Manager with information specifying whether they are using header bidding. Google employs the Header-Bidding-Detection table on a daily basis to examine every line item for signals that indicate whether a publisher has created line items to receive bid information from header bidding auctions. One of these signals, degeneracy analysis, analyzes the creation of many line items that are nearly identical except that each line item has a unique key-value combination (likely corresponding to a potential winning bid from a header bidding action). Those values are often in fixed increments (measured in

cents) that represent the likely range of possible values for the highest bid from a particular header bidding auction. A second signal analyzes “key names” which are used by publishers when communicating a bid from a header bidding auction to Google Ad Manager. Header bidding is inferred by Google when key names contain terms commonly associated with header bidding (e.g., “hb_pb” or “amznbid”).

To create the data underlying the identified charts, the Header-Bidding-Detection table information is merged with the DRX-Internal-Stats table information by line item ID. Such a merge allows analysis of Google Ad Manager activity based on experiment variables (e.g., whether a particular impression was part of a low-level traffic experiment or holdback experiment) and based on whether a potential impression was filled through header bidding (or via other forms of Google Ad Manager traffic, including remnant non-header bidding line items).

While Google has generally identified the data used to create the identified charts, Google conducted a reasonable investigation and was unable to determine how the identified tables were created from that data. The analysts who created the tables no longer work at Google, and Google has been unable to identify any employees that have knowledge of how the identified tables were created. Nor has Google been able to identify the specific data, including any applied filters or calculations, used to create the identified tables.

Dated: April 27, 2023

Respectfully submitted,

/s/ Julie S. Elmer

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CERTIFICATE OF SERVICE

I hereby certify that on April 27, 2023, I served the foregoing to all counsel of record via email.

/s/ Sara Salem

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EXHIBIT A

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